



National Transportation Safety Board

Midair Collision Between Cessna 172M and Experimental North American Rockwell Sabreliner

San Diego, California
August 16, 2015

Investigator-in-Charge
Presentation

Accident

- Cessna (N1285U)
 - Pilot fatally injured
 - Practicing touch-and-go landings
- Sabreliner (Eagle1)
 - Two pilots and two mission specialists fatally injured
 - Entered the traffic pattern
- Both were in contact with ATC

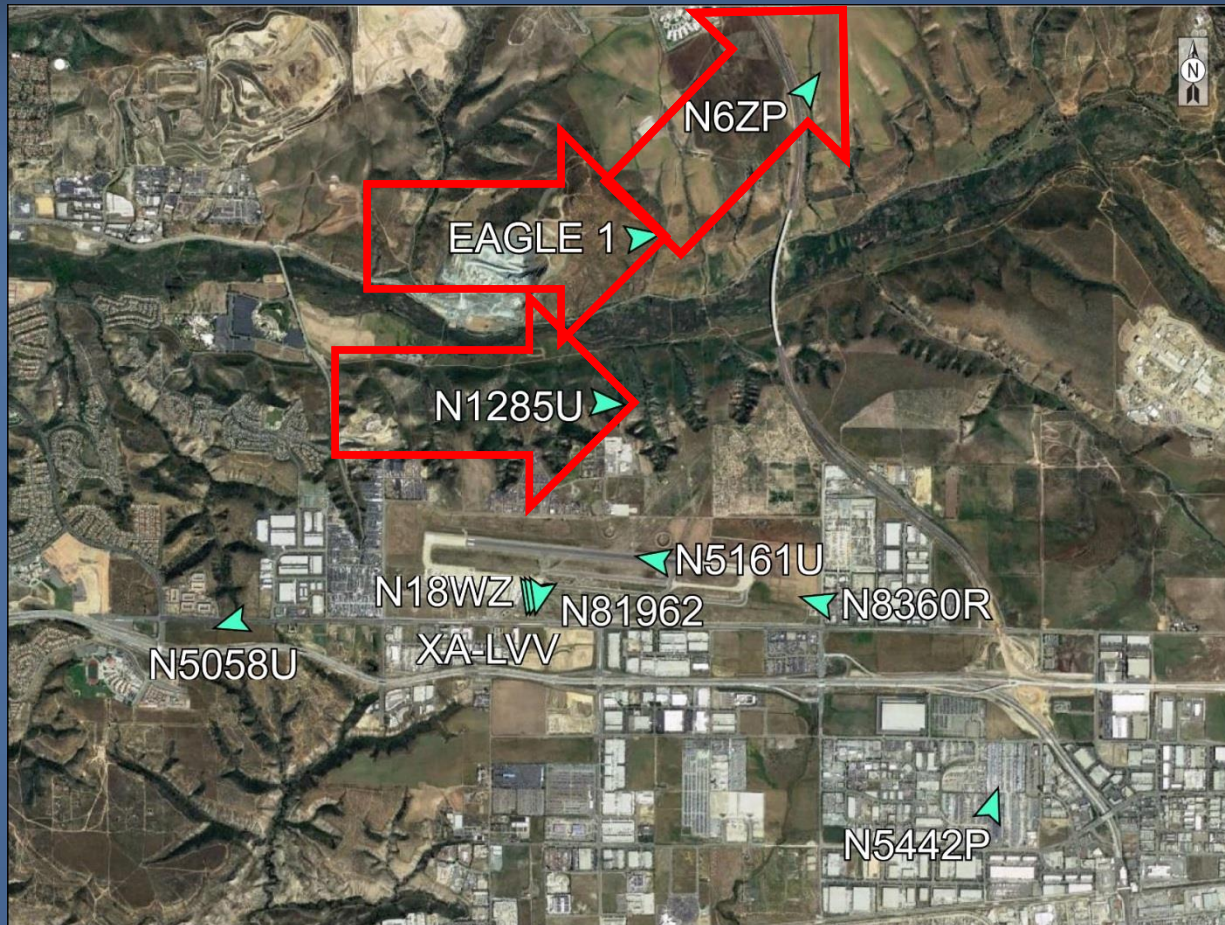
Airport



Air Traffic Control

- Federal contract tower
- Combined local and ground positions
- On-the-job training
- Local controller responsible for all activity
- Controlling 9 aircraft

The Collision



San Diego Brown Tower

11:02:12

1102:28

November four two papa the helicopter is just over the underrun now

Eagle1

N1285U

N6ZP

N5161U

N8360R

N18WZ
XALVV

N5058U



1 mile

Air Traffic Controller

- Controller exceeded own workload limit
- Several errors
 - Misidentified accident Cessna
 - Did not ensure Cessna was turning before instructing Eagle1 to turn
 - Did not issue safety alert to Eagle1

ATC Alternative Actions

- To resolve increasing workload
 - Direct traffic away from Brown Field
 - Split local control/ground control positions
- Confirm accident Cessna was turning before issuing turn instruction to Eagle1
- Issue safety alert to Eagle1

See and Avoid – Visibility Study

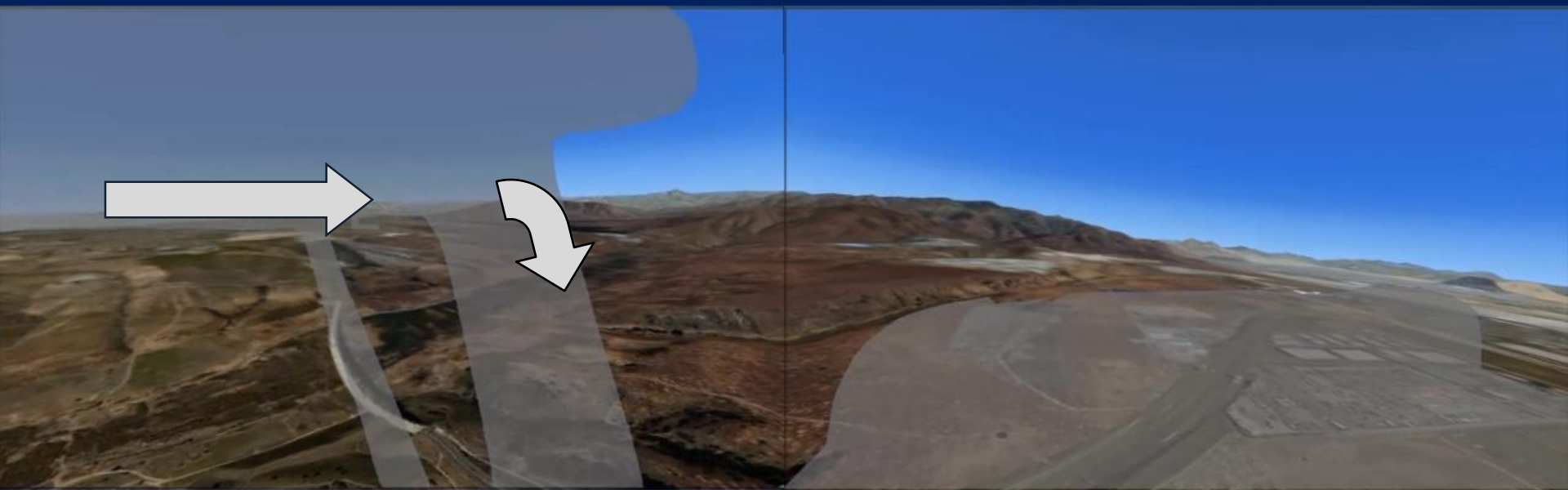
- Cessna pilot's view of Eagle1
 - Slow moving object
 - Largely obscured by airplane structure
- Eagle1 copilot's view of the accident Cessna
 - In view
 - During the turn, a slow moving object
 - Obscured by airplane structure
 - Blended in with background clutter



11:02:10

R2

11:02:31



Probable Cause

The local controller's (LC) failure to properly identify the aircraft in the pattern and to ensure control instructions provided to the intended Cessna on downwind were being performed before turning Eagle1 into its path for landing. Contributing to the LC's actions was his incomplete situational awareness when he took over communications from the LC trainee due to the high workload at the time of the accident. Contributing to the accident were the inherent limitations of the see-and-avoid concept, resulting in the inability of the pilots involved to take evasive action in time to avert the collision.

Safety Issues

- Air traffic controller judgment
- Collision avoidance technologies



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